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# **Brief Introduction**

Wenzhou Topnotch Machine Co., Ltd., brand name TANA .established in the year 2003, located at China famous pump&valve TownOubei, Wenzhou. We're specialized in producing and marketing all kinds of industrial valves, pump & actuators. Our corporate Vision is to be a pipeline control specialist by supply products and help our valued customer solve their problems with excellent sales & after-sales service, and also reasonable price.

Over the years, we already have expanded our operations with team of well experienced design, manufacturing and marketing engineers. We have 100-150 employees, around 50 sets advantaged producing equipments, which ensure our production ability. Our products have been widely application in the gas, oil, refining, chemical, marine, power generation and pipeline transmission industries. And 80% of products are supplied to SoutheastAsia, the Middle East, North America, Europe and Africa, more than 30 oversea countries, we have accumulated good reputation from our clients.

Quality is at the heart of everything we do, through product development to manufacturing, supply and sale. We make products strictly according to International standards & clients' requirements, and have established quality control system to ensure us offer the high quality products.

"Keep the promise and offer the top-class products & service" is our principle, we believe that we can establish and maintain long term win-win cooperation through our mutual effort by reasonable price, good quality product and best service.

Welcome to contact us, thank you!







#### Advanced Equipment

Boke has a high-precision internal grinder CNC machine tools, machining center and other advanced manufacturing equipment of pneumatic actuator, sophisticated technology and strict and perfect quality management system, is a leading technology and professional technology team, take full advantage of new technologies, new processes, new materials to ensure that the product quality is stable and reliable and reliable.















#### **Design And Characteristics**

AT series pneumatic actuators in a combination of domestic and foreign new technology, new material, new technology and innovative ideas on the basis of research and development, design and become, has the following features:

- Comply with the latest international standard: with ISO5211 DIN3337 and VDI/VDE3845, NAMUR standard
- High strength extruded aluminum cylinder, the inner surface by fine grinding and hard anodic oxidation treatment, long service life, low friction coefficient, action quickly.
- Modern modelling, the structure is compact, more specifications to choose from, more economical and practical.
- Novel and unique design. The unique external stroke adjusting mechanism, convenient for plus or minus ±5° fully open or close two-way adjustment position.
- External structure of actuator, double-acting and single acting has a good interchangeability. (single-acting optional often closed or open)
- NAMUR standard multi-function position indicator, visual instructions, convenient installation and output all the accessories.
- Spring precompression load, safe and convenient installation and disassembly.
- Piston and end cover adopt the die casting aluminum alloy, high strength, light weight, beautiful appearance.
- Sealing materials, optional, the actuator can be applied to high or low temperatures.
- According to the need to provide a variety of angular travel (for example: 120 °C, 135 °C, 180 °C, etc.) and three type pneumatic actuators.
- Standard gas nipple holes, do not need connection board, solenoid valves can be installed directly, convenient and efficient.

#### **Operating Conditions**

#### **Operating Conditions**

- Dry clean air or inert gas, as well as internal components and actuators and the lubricant is compatible with non corrosive gas.
- Dew point temperature is 20 °C + operating medium
- No more than 30  $\mu$  impurity particles in the medium size. (use the locator is used when impurity particles in the medium size no more than 5  $\mu$ )

#### Air pressure

• 3 bar to eight bar (the default selection, with five bar)

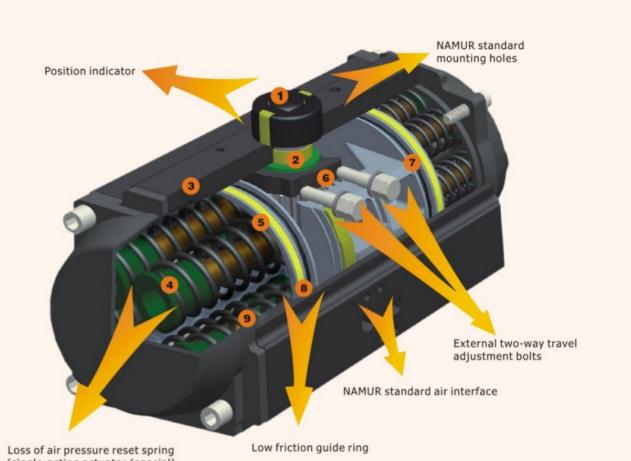
#### Working environment temperature

- Standard for -20°C to + 80°C
- Low temperature type -40°C to + 80°C
- Type high temperature was minus -20°C to + 160°C

#### lubrication

- · Under the condition of normal use, standard without adding lubricant
- The use of low or high temperature place, need to use special type of grease





(single-acting actuator (special)

#### Actuator structure

1, the indicator (multi-function position indicator) NAMUR standard indicator switch indication at the same time, ease of installation position switch and positioner, etc.

#### 4, end cover Gold at the end of the spray the die casting aluminum PTFE or nickel plating proc

2, the output shaft Nickel plated alloy steel, high precision single unit output shaft, and at the same time Comply with NAMUR, with ISO5211 DIN3337 standard. According to the customer request custom sizes and stainless steel material.

5, the piston Dual piston rack, hard oxid die casting aluminum Cast (large size) processing, the Said, quick operation, long gorgeous Pour the piston of

of rotation.

#### 3, the cylinder body

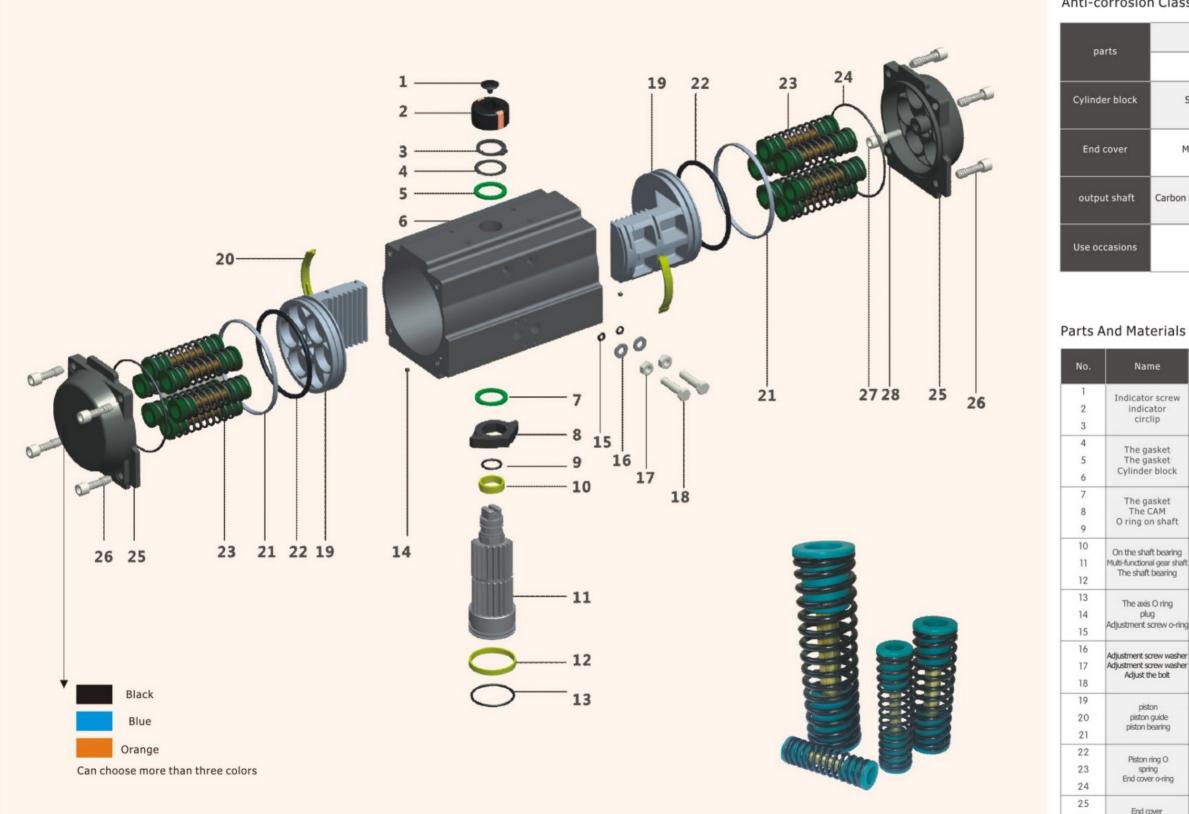
Hard aluminum alloy ASTM6005 body can be used The oxidation, epoxy resin coating (coating blue according to the requirements Color, orange, yellow, etc.), PTFE or nickel plated Different requirements.

6, the stroke control (external two-way stroke Two independent external screw, you can For accurate convenient, Reliable adjus

y on the surface of alloy color, æssing.	7, sealing Use under the working conditions of the nitrile rubber, on a high Temperature or low temperature using fluorine rubber or silicone rubber.
lation or adopt the steel galvanized e installation position of service life, simple and can change the direction	8, low-friction guide ring With low friction, long-life compound material, to avoid Direct contact of metals and metal, replacement of simple maintenance Convenient.
adjusting bolt) stroke adjustment te limit, ±5° position, tment.	9, high performance spring (loss of air pressure reset spring) Made of high quality material, coating processing, preloading assembly. With strong corrosion resistance and service life. To be able to Safe, simple disassembly single-acting actuator, pass Change the spring quantity meet different torque output range.







#### Anti-corrosion Class

Anti-corrosion Class										
А	В									
Sclerosis of the anode	Teflon coating + anode hardening									
Metal polyester coating	Teflon coating									
Carbon steel chemical nickel plating	Carbon steel chemical nickel plated or stainless steel									
General situations	General occasions or low concentration acid environment									

Name	Number	material	Anticorrosive processing	Optional material
Indicator screw	1	plastic	-	
indicator circlip	1	plastic Stainless steel	-	-
circlip	1	Stamless steel	-	-
The gasket	1	Stainless steel	-	-
The gasket	1	Engineering plastics	-	-
Cylinder block	1	Cast aluminum	Hard anodized, etc.	-
The gasket	1	Engineering	-	-
The CAM	1	plastics Alloy steel	-	
O ring on shaft	1	Nitrile rubber	-	Fluorine rubber/ silicone rubber
On the shaft bearing	1	Engineering plastics	-	-
Multi-functional gear shaft. The shaft bearing	1	Alloy steel	Nickel plating	Stainless steel
	1	Engineering plastics	-	-
The axis O ring	1		-	
plug	2	Nitrile rubber	-	Fluorine rubber
Adjustment screw o-ring	2		-	
Adjustment screw washer	2		-	-
Adjustment screw washer	2	Stainless steel	-	-
Adjust the bolt	2		-	-
piston	2	Aluminum/steel casting	Oxidation/galvanized	Stainless steel
piston guide	2	Engineering plastics	-	-
piston bearing	2	Engineering plastics	-	-
Piston ring O	2	Nitrile rubber	-	Fluorine rubber/
spring	0~12	Spring steel	varnished	silicone rubber
End cover o-ring	2	Nitrile rubber	-	Fluorine rubber/ silicone rubber
Enderson	2	Contrationer	Decoder metion at-	-
End cover end cover dropping bolts	8	Cast aluminum Stainless steel	Powder coating, etc.	-
Limit bolts	2	Stainless steel	-	-
Limit nut	2	Stainless steel	-	-

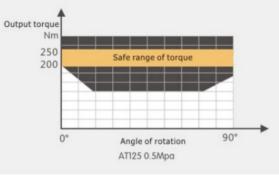


#### Actuator is Chosen

- When choosing pneumatic actuators, need to add TVC in valve torque have been identified;
- Clean, low friction lubrication medium increases 20% safe;
- Water vapor or the TVC lubricating liquid medium to increase 25%;
- 30% increase of lubricating paste liquid medium TVC;
- Dry gas medium is increased by 40% when the lubrication;
- The lubrication with gas particles powder medium increases 60% safe; (the above recommended secure value for the firm theory, for reference only)

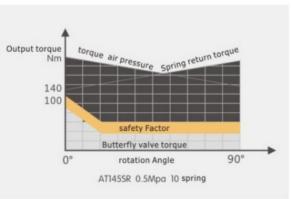
#### Double-acting actuators - choose the sample

When a need 200 nm of torque control ball valve, the air supply pressure is 0.5 Mpa, Medium for the lubrication of water vapor, considering safety factors, a 25% increase in TVC Is equal to 250 nm, according to the double function output torque table lookup air pressure 0.5 Mpa, And then along the column vertical search for equal or similar torque data, choose 268 nm, again Along the bank to the left to find its type, select AT125 type.



#### Single-acting actuator - choose the sample

When a need 100 nm of torque control ball valve, the air supply pressure is 0.5 Mpa, Medium for the lubrication of water vapor, considering safety factors, a 40% increase in TVC Is equal to 140 nm, according to the double function output torque table lookup air pressure 0.5 Mpa, And then along the column vertical search for equal or similar torque data, choose 268 nm, again Along the bank to the left to find its type, select AT125 type.Along the bank and then to the left to find the end of the air pressure 0.5 MPa 171.7 Nm torque, torque of the air pressure and spring return torque must be tonsidered Relative force balance, and then along the bank to the left to find the model number and spring, choose AT145SR, 10 spring.



#### Order Information

- ★ Valve type, pressure of work, specifications, sealing form (hard or soft) using medium and the working environment temperature;
- ★ Pneumatic actuators: double-acting and single acting (closed or open);
- ★ Electromagnetic valve: double electric control solenoid valve, whether single electronic control solenoid valve, using voltage, explosion-proof;
- Limit switch: ordinary, explosion-proof;
- ★ Locator: pneumatic positioner, current signal, pressure signal, electrical switches, explosion-proof type:
- ★ Air source treatment sanlian pieces;
- ★ Manual device;
- ★ Special custom;
- ★ Imported accessories should be special instructions;



#### Double-acting actuators-Working principle

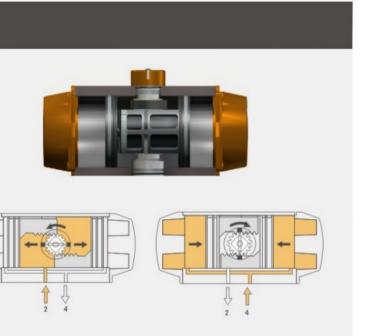
When the air pressure from the port (2) into the cylinder between the pistons lumen, makes the separation to the direction on both ends of the cylinder, piston chamber on both ends of the air through the intake (4), and synchronize the two piston rack drives the output shaft (gear) counterclockwise.

And air pressure from the port (4) into the cylinder between the pistons lumen, separate the two piston to move on both ends of the cylinder, the air cavity in the middle of the air through the intake (2), and synchronize the two piston rack drives the output shaft rotate clockwise (gear).

(if the piston relative to reverse direction installation, output shaft into a reverse rotation)

#### AT Double Acting Type Actuator Output Torque

			Input air press	ure (units bar
Model	3.0	4.0	5.0	6.0
			Source outpu	t torque (Nm)
AT032	4.6	6.1	7.6	9.2
AT052	12.0	16.0	20.0	24.0
AT063	21.7	28.9	36.1	43.4
AT075	35.0	46.6	58.3	69.9
AT083	42.8	57.0	71.3	85.5
AT092	67.6	90.1	112.6	135.2
AT105	97.7	130.3	162.9	195.5
AT125	173.3	231.0	288.8	346.5
AT140	260.7	347.6	434.5	521.4
AT160	397.2	529.6	662.0	794.4
AT190	640.2	853.6	1067.0	1280.4
AT210	879.8	1173.1	1466.4	1759.7
AT240	1379.0	1838.6	2298.3	2757.9
AT270	1939.2	2585.6	3232.0	3878.4

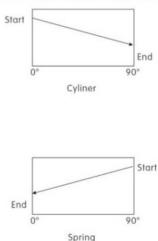


7.0	8.0
10.7	12.2
28.0	32.0
50.6	57.8
81.6	93.2
99.8	114.0
157.7	180.2
228.0	260.6
404.3	462.0
608.3	695.2
926.8	1059.2
1493.8	1707.2
2052.9	2346.2
3217.6	3677.2
4524.8	5171.2

Torque diagram double acting actuators



Torque diagram single acting actuators



09

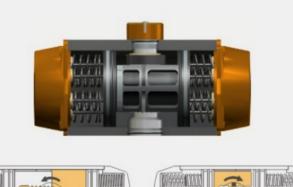


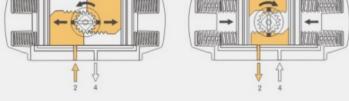
#### Single-acting Actuator-working Principle

When the air pressure from the port (2) into the cylinder between the pistons lumen, makes the separation to move on both ends of the cylinder, piston force on both ends of the spring compression, chamber on both ends of the air through the intake (4), and synchronize the two piston rack drives the output shaft (gear) counterclockwise.

After reversing solenoid in air pressure, the two piston cylinder under the elasticity of spring to the center direction, from the air cavity in the middle of the air intake (2), and synchronize the two piston rack drives the output shaft rotate clockwise (gear).

(if the piston relative to reverse direction installation, output shaft into a reverse rotation)





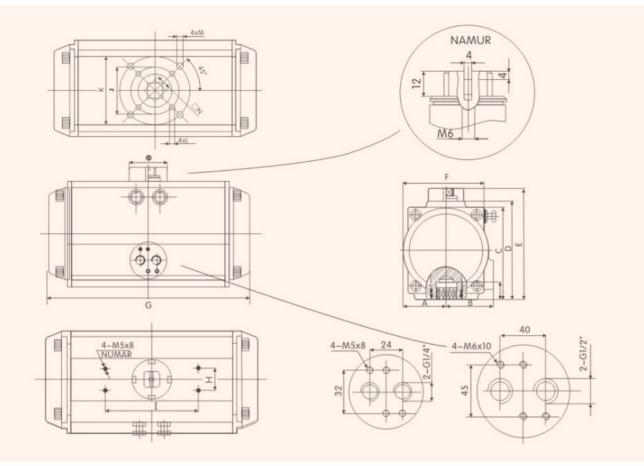
#### Single-acting actuator - output torque (unit:)

					Gas so	urce to o	vercome	the sprir	ig outpu	t torque						output	torque
Input air pressure(unit:) 2.5Bor		3Bo	3Bar		4Bar		5Bar		6Bar		7Bar		8Bar		spring		
Model	Spring number	0° start	90° end	0° start	90° end	0° start	90° end	0° start	90° end	0° start	90° end	0° start	90° end	0° start	90° end	90° start	0° end
AT52SR	5 6 7 8 9 10 11 12	5.7 4.9 4.0	3.8 2.5 1.3	7.6 6.9 6.0 5.2 4.3	5.7 4.5 3.3 2.0 0.8	10.9 9.8 9.2 8.3 7.4 6.6	8.5 7.3 6.0 4.8 3.6 2.3	14.0 13.2 12.3 11.5 10.6 9.7	10.4 9.1 7.9 6.7 5.4 4.2	17.2 16.3 15.5 14.6 13.8	14.1 12.8 11.6 10.4 9.1	20.3 19.5 18.6 17.8	16.8 15.6 14.3 12.2	22.6 21.8	18.3	6.2 7.4 8.6 9.9 11.1 12.4 13.6 14.8	4.3 5.0 5.9 6.7 7.6 8.5 9.3 10.2
AT63SR	5 6 7 8 9 10 11 12	11.4 10.1 8.6	7.7 5.7 3.6	15.0 13.6 12.5 10.9	11.4 9.3 7.2 5.1	22.3 20.9 19.5 18.2 16.8 1.4	14.9 16.6 14.5 12.4 10.4 8.2	28.3 26.8 25.5 24.1 22.8 21.5 20.0	23.9 21.9 19.8 17.7 15.6 13.5 11.4	32.8 31.4 30.0 28.7 27.3	27.0 24.9 22.8 20.7 18.6	40.1 38.7 37.3 36.0 34.6	34.3 32.2 30.1 28.0 25.9	44.7 43.3 41.9	37.4 35.3 33.3	10.4 12.5 14.6 16.7 18.8 20.9 22.9 25.0	6.8 8.2 9.6 10.9 12.3 13.7 15.0 16.4
AT75SR	5 6 7 8 9 10 11 12	14.5 12.4 10.4	10.6 7.6 4.8	19.4 17.3 15.2 13.1	15.5 12.6 9.7 6.8	29.5 27.4 25.3 23.1 21.0 19.0	25.7 22.7 19.9 16.9 14.1 11.1	37.5 35.4 33.3 34.2 28.8 27.0 24.9	32.8 29.9 27.0 24.1 21.2 18.3 15.4	43.2 41.1 39.0 37.0 34.9	37.0 34.1 31.2 28.3 25.4	53.3 51.2 49.1 47.0 44.9	47.0 44.2 41.2 38.4 35.4	59.1 57.0 54.9	51.2 48.4 45.4	14.5 17.4 20.3 23.2 26.1 29.0 31.9 34.7	10.5 12.7 14.8 16.9 19.0 21.1 23.2 25.3
AT83SR	5 6 7 8 9 10 11 12	23.3 20.1 17.0	16.1 11.5 6.9	31.1 28.0 24.8 21.7	24.0 19.3 14.8 10.1	46.8 43.7 40.5 37.4 34.2 31.0	39.7 35.1 30.5 25.8 21.3 16.6	59.4 56.2 53.1 49.9 46.7 43.6 40.4	50.7 46.2 41.5 37.0 32.3 27.7 23.2	68.8 65.6 62.4 59.3 56.1	57.2 52.6 48.0 43.4 38.9	84.5 81.2 78.1 75.0 71.7	72.9 68.3 63.7 59.1 54.5	93.8 90.6 87.4	79.3 74.8 70.2	23.0 27.6 32.2 36.8 41.4 46.0 50.6 55.2	15.8 19.0 22.1 25.3 28.5 31.6 34.8 38.0
AT92SR	5 6 7 8 9 10 11 12	33.1 28.4 23.8	22.0 15.2 8.2	44.2 39.6 34.9 31.3	33.2 26.4 19.4 12.6	66.8 62.2 57.5 52.9 48.2 43.6	55.9 49.0 42.1 35.2 28.4 21.5	84.8 80.2 75.5 70.9 66.2 61.5 56.8	71.6 64.7 57.9 51.0 44.1 37.2 30.4	98.1 93.5 88.8 84.1 79.4	80.5 73.6 66.7 59.9 53.0	120.7 116.0 111.3 106.6 101.9	103.0 96.1 89.2 82.4 75.5	134.0 129.2 124.5	111.8 105.0 98.1	34.4 41.2 48.1 55.0 61.9 68.7 75.6 82.5	23.3 28.0 32.7 37.3 42.0 46.7 51.4 56.0



					Gas so	urce to o	vercome	the sprin	ng outpu	t torque						output	
Input pressure		2.5B	ar	3Bo	ır	4Bo	ır	5B	ar	6	Bar	7	Bar	81	Bar	sp	ring
	Spring	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0
Model	number	start	end	start	end	start	end	start	end	start	end	start	end	start	end	start	en
AT105SR	5 6 7 8 9 10 11 12	51.0 44.7 38.4	33.4 23.5 13.7	67.5 61.1 54.9 48.5	49.9 40.0 30.3 20.4	100.6 94.2 87.9 81.6 75.3 68.9	83.0 73.2 63.4 53.5 43.7 33.4	127.3 121.0 114.7 108.4 102.0 95.7 89.4	106.2 96.4 86.5 76.8 66.5 57.0 47.5	147.7 141.5 135.1 128.7 122.5	119.6 109.8 99.6 90.1 80.6	180.8 174.5 168.2 161.8 155.5	152.7 142.9 132.6 123.1 113.6	201.2 194.8 188.6	165.7 156.2 146.7	49.2 59.1 68.9 78.7 88.6 98.4 108.3 118.1	31 38 44 50 56 63 69 75
AT125SR	5 6 7 8 9 10 11 12	73 63 52	47 31 15	98 88 77 67	72 56 40 25	148 138 127 117 107 96	122 107 90 75 59 44	188 178 167 157 146 136 125	157 141 125 109 94 78 63	217 207 196 186 176	176 159 144 128 113	268 257 247 236 226	226 210 194 178 163	297 286 276	245 228 213	79 94 110 125 141 157 173 188	5 6 7 8 9 10 11 12
AT140SR	12 5 6 7 8 9 10 11 12	128 111 94	85 59 33	171 154 137 120	127 102 76 50	256 239 222 205 187 170	213 187 162 136 110 84	325 308 291 273 256 238 221	273 247 221 196 169 143 118	376 358 341 324 307	307 281 255 229 203	462 444 427 409 392	392 367 340 314 289	512 495 478	426 400 374	129 155 181 206 232 258 284 310	8 10 12 13 15 17 18 20
AT160SR	5 6 7 8 9 10 11 12	193 165 137	124 83 41	259 232 203 176	191 149 107 66	392 365 336 309 280 253	324 282 240 199 157 115	498 469 442 413 386 358 330	415 373 237 290 248 207 165	575 546 519 491 463	465 423 381 340 298	708 679 652 624 596	598 556 514 473 431	785 757 729	647 606 564	208 250 292 333 375 417 458 500	14 16 19 21 21 21 21 30 30 33
AT190SR	5 6 7 8 9 10 11 12	332 292 252	222 161 99	438 398 358 318	329 267 205 143	651 611 571 531 491 451	542 480 418 356 295 233	824 784 744 704 664 624 584	693 631 569 507 446 384 322	957 917 877 837 797	782 720 658 597 535	1169 1130 1090 1050 1010	995 933 871 809 748	1302 1263 1223	1084 1022 960	309 371 433 495 557 618 680 742	20 24 28 30 40 44 44
AT210SR	5 6 7 8 9 10 11 12	390 335 280	285 209 133	523 468 413 358	418 342 266 190	789 734 679 624 569 514	684 608 532 456 380 304	1000 945 890 835 780 725 670	874 798 722 646 570 494 418	1156 1101 1046 991 936	988 912 836 760 684	1422 1367 1312 1257 1202	1254 1178 1102 1025 950	1578 1523 1468	1368 1292 1216	380 456 532 608 684 760 836 912	2: 3: 3: 4: 4: 5: 60 60
AT240SR	5 6 7 8 9 10 11 12	552 470 388	409 297 187	744 662 580 498	600 489 379 268	1129 1047 964 883 800 718	985 874 764 653 542 431	1432 1349 1267 1185 1103 1021 939	1259 1149 1037 926 816 705 594	1652 1569 1488 1406 1323	1422 1311 1201 1090 979	2037 1954 1872 1791 1708	1807 1696 1586 1474 1363	2257 2176 2093	1970 1859 1748	554 665 775 886 998 1108 1219 1330	4 4 5 6 7 8 90
4T2705R	5 6 7 8 9 10 11 12	903 790 679	675 519 361	1195 1083 972 860	968 811 654 497	1779 1667 1556 1444 1332 1220	1552 1396 1238 1081 923 767	2252 2141 2029 1917 1805 1693 1582	1981 1823 1666 1509 1352 1194 1037	2614 2502 2390 2278 2167	2252 2094 1937 1779 1623	3199 3087 2974 2862 2751	2836 2678 2521 2364 2207	3560 3448 3336	3107 2949 2792	787 943 1101 1258 1416 1572 1730 1887	50 67 89 10 11 12 13
AT300SR	5 6 7 8 9 10 11 12	1097 935 772	729 494 258	1316 1153 991	875 639 403	1916 1754 1592 1430	1402 1166 930 695	2517 2355 2193 2030 1868	1929 1693 1458 1222 986	3118 2956 2793 2631	2456 2221 1985 1749	3719 3556 3394	2984 2748 2512	4482 4319 4157	3747 3511 3275	1061 1273 1485 1697 1909 2122 2334 2546	7: 8: 10 11 13 14 16 17
AT350SR	5 6 7 8 9 10 11 12	1553 1292 1031	964 586 208	1863 1602 1341	1157 779 401	2745 2484 2224 1963	1922 1544 1165 787	3626 3336 3105 2844 2584	2686 2307 1929 1551 1172	4508 4247 3986 3726	3449 3071 2693 2314	5390 5129 4869	4214 3836 3457	6532 6271 6011	5356 4978 4599	1702 2043 2383 2724 3064 3405 3745 4086	11 14 16 18 21 23 25 28





#### Size Table

Model	A	В	с	D	E	F	G	н	I	ſ	к	ι	м	□N	z	Φ	Air connection
AT52	30	41.5	65.5	72	92	65	147	30	80	F03	F05	M5 × 8	M6 × 10	11	14	Ф40	NAMUR G1/4"
AT63	36	47	81	87.5	107.5	72	168	30	80	F05	F07	M6 × 10	M8 × 13	14	18	Ф40	NAMUR G1/4"
AT75	42	53	94	99.5	119.5	81	184	30	80	F05	F07	M6 × 10	M8 × 13	14	18	Ф40	NAMUR G1/4"
AT83	46	57	98.5	108.7	128.7	92	204	30	80	F05	F07	M6 × 10	M8 × 13	14	21	Ф40	NAMUR G1/4"
AT92	50	58.5	111	116.8	136.8	98	262	30	80	F05	F07	M6 × 10	M8 × 13	14	21	Ф40	NAMUR G1/4"
AT105	57.5	64	122.5	133	153	109.5	268	30	80	F07	F10	M8 × 13	M10 × 16	17	26	Ф40	NAMUR G1/4"
ATI25	67.5	74.5	145.5	155	175	127.5	296	30	80	F07	F10	M8 × 13	M10 × 16	22	26	Ф55	NAMUR G1/4"
AT140	75	77	160.75	171.5	191.5	137.5	390	30	80	F10	F12	M10 × 16	M12 × 20	27	31	Ф55	NAMUR G1/4"
AT160	87	87	184	197	217	158	454	30	80	F10	F12	M10 × 16	M12 × 20	27	31	Ф55	NAMUR G1/4"
AT190	103	103	216	230	260	189	525	30	130		F14		M16 × 25	36	40	Ф80	NAMUR G1/4"
AT210	113	113	235.5	255	285	210	532	30	130		F14		M16 × 25	36	40	Ф80	NAMUR G1/4"
AT240	130	130	264	288	318	245	610	30	130		F16		M20 × 25	46	50	Ф80	NAMUR G1/4"
AT270	147	147	299	326	356	273	722	30	130		F16		M20 × 25	46	50	Ф80	NAMUR G1/2"
AT300	162	162	348	348	378	324	742	30	130	F16	F20	M20 × 25	M20 × 25	46	60	Ф80	NAMUR G1/2
AT350	190	190	402	402	432	380	860	30	130	F16	F20	M20 × 25	M20 × 25	46	60	Ф80	NAMUR G1/2

# TANA® WENZHOU TOPNOTCH MACHINE CO., LTD., AT SERIES PNEUMATIC ACTUATORS

Mounting Holes	
B C C/4 A B A A A A A A A A A A A A A A A A A A	
<ul> <li>Air interface accord with NAMUR standard, it can be easy and convenient to install solenoid valves</li> </ul>	<ul> <li>Standard NAMUR stan output shaft of the upp mounting holes, can m locator directly meshir</li> </ul>

#### Weighing Scale

Model	Double–acting perform highly quantity (KG)	Single–acting perform highly quantity (KG)	Model	Double–acting perform highly quantity (KG)	Single–acting perform highly quantity (KG)
AT052	1.4	1.5	AT160	20.1	24
AT063	2.0	2.1	AT190	31.3	35.3
AT075	2.7	2.9	AT210	46.8	54.8
AT083	3.1	3.6	AT240	67.3	80.2
AT092	4.6	5.2	AT270	96.9	118
AT105	6.8	6.9	AT300	110	130
AT125	9.0	10.1	AT350	186	234
AT140	13.2	15.6			

#### Gas consumption

Model	Open the volume (liters)	Close to the volume (liters)	Model	Open the volume (liters)	Close to the volume (liters
AT052	0.12	0.16	AT160	3.7	3.2
AT063	0.21	0.23	AT190	5.9	5.4
AT075	0.30	0.34	AT210	7.5	7.5
AT083	0.43	0.47	AT240	11.0	9.0
AT092	0.64	0.73	AT270	17.0	14.0
AT105	0.95	0.88	AT300	23.8	29.7
AT125	1.60	1.40	AT350	35.1	46.3
AT140	2.50	2.20			

#### Switch time

Model	Open to the time ( seconds)	Close to the time (seconds)	Model	Open to the time ( seconds)	Close to the time (seconds)
AT052	0.2	0.3	AT160	1.5	1.7
AT063	0.3	0.3	AT190	2.0	2.2
AT075	0.3	0.4	AT210	2.7	3.2
AT083	0.4	0.5	AT240	3.5	4.0
AT092	0.5	0.6	AT270	4.0	4.5
AT105	0.7	0.8	AT300	5.0	5.5
AT125	0.9	1.1	AT350	6.0	7.0
AT140	1.2	1.4			



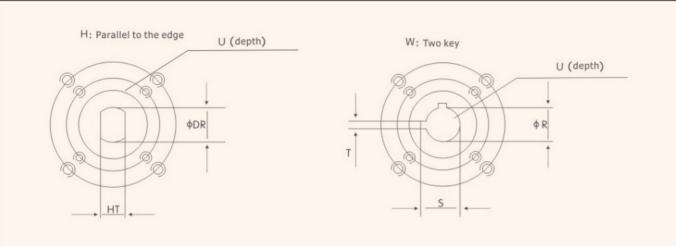
ndard groove and the pper cylinder body make the limit switch, ing and installation



• AT the bottom of the mounting hole accords with ISO5211, DIN3337 standard design, can be directly installed the clutch pneumatic wheel (institution) or mounting bracket.



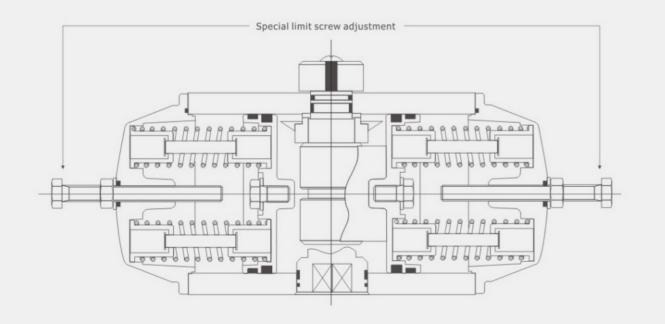
## Output Hole Connection Dimension (custom)(mm)



Model	AT52	AT63	AT75	AT83	AT92	AT105	AT125	AT140	AT160	AT190	AT210	AT240	AT270	AT300
Model	DA/SR													
φR	12.7	12.7	12.7	15.88	19.05	22.23	22.23	28.58	28.58	31.75	31.75	33.34	38.1	41.28
S	14.2	14.2	14.2	18.4	21.6	24.8	24.8	32.1	32.1	35.3	35.3	37.4	42.4	45.3
Т	3	3	5	5	5	5	5	8	8	8	8	10	10	12
U	32	32	32	32	32	45	45	45	45	45	45	51	51	65
φDA	13	13	13	16.1	19.2	22.4	22.4	28.8	28.8	32	32	33.6	38.4	41.5
HT	10	10	10	12	14	17	17	22	22	24	24	27	27	32

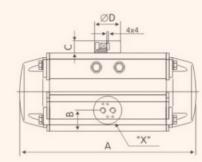
#### All limit actuator travel adjustment

New type of pneumatic actuator at both ends to provide special regulation limit screw, customers can according to need to adjust  $0^{\circ} - 90^{\circ} \\ 0^{\circ} - 120^{\circ}$  or  $0^{\circ} - 180^{\circ}$  range at any Angle, can be carried out in all series of actuators on the whole.

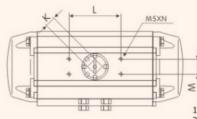




## 120° / 180° Schedule the appearance of actuator and connection size (double)



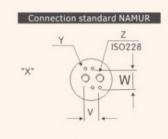




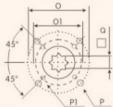
According to the need to provide other specifications actuators
 Can provide different stroke of actuators. Such as 140°/160° schedule

	AT52	AT63	AT75	AT83	AT92	AT105	AT125	AT140	AT160	AT190	AT210	AT240	AT270	AT300
Model	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR	DR
ISOflange	-	F05	F05-07	-	F07-10	-	F07-10	-	F10-12	-	F14	-	-	-
A (120°)	-	183	243	-	309	-	397	-	504	-	622	-	-	-
A (180°)	- 1	225	305	-	385	-	498	-	630	-	775	-	-	-
В	1 -	30	30.5	-	37.5	-	45	-	52	-	62.5	-	-	-
C	1 -	20	20	-	20	-	30	-	30	-	50	-	-	-
φD	1 -	40	40	-	40	-	56	-	65	-	80	-	-	-
E	-	72	84.5	-	111	-	136	-	169	-	213	-	-	-
F	1 -	85	102	-	127	-	157	-	196	-	245	-	-	-
G	1 -	36	42.5	-	56	-	69.5	-	88	-	110	-	-	-
Н	1 -	47	52	-	67	-	82	-	99	-	112	-	-	-
1	1 -	14.5	14.5	-	14.5	-	24.5	-	24.5	-	44.5	-	-	-
Jmim	1 -	16	16	-	19	-	24	-	29	-	38	-	-	-
К	-	11	17	-	17	-	27	-	27	-	36	-	-	-
L	- 1	80	80	-	80	-	80	-	80	-	130	-	-	-
M	1 -	30	30	-	30	-	30	-	30	-	30	-	-	-
N	1 -	8	8	-	8	-	8	-	8	-	8	-	-	-
φ O1	-	50	50	-	70	-	70	-	102	-	140	-	-	-
φO	1 -		70	-	102	-	102	-	125	-		-	-	-
P1	1 -	4-M6	4-M6	-	4-M8	-	4-M8	-	4-M10	-	4-M16	-	-	-
Р	1 -		4-M8	-	4-M10	-	4-M10	-	4-M12	-		-	-	-
□Q	-	14	14	-	17	-	22	-	27	-	36	-	-	-
φR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1 -	-	-	-	-	-	-	-	-	-	-	-	-	-
Т	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U	1 -	-	-	-	-	-	-	-	-	-	-	-	-	-
V	-	24	24	-	24	-	24	-	24	-	24	-	-	-
W	-	32	32	-	32	-	32	-	32	-	32	-	-	-
Y	1 -	M5x8	M5x8	-	M5x8	-	M5x8	-	M5x8	-	M5x8	-	-	-
Z	1 -	1/8"	1/8"	-	1/4"	-	1/4"	-	1/4"	-	1/4"	-	-	-



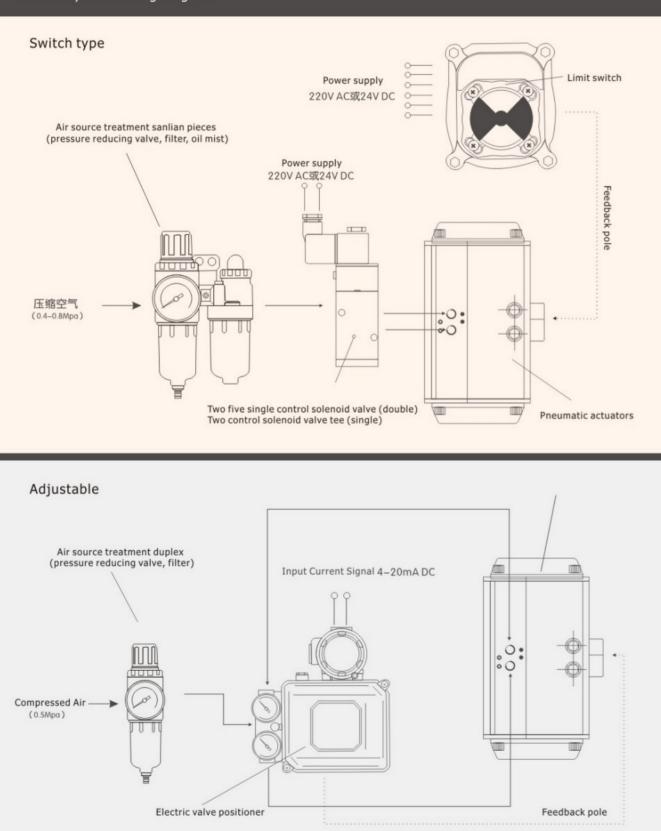


Connection standard ISO5211/VDI/VDE3845





#### Control system wiring diagram



## **TANA** WENZHOU TOPNOTCH MACHINE CO., LTD., AT SERIES PNEUMATIC ACTUATORS

Common Failure Inspection And Elimination Method

Fault Phenomenon	Check The Project
	1, Electromagnetic valve is normal, the electromagnetic valve core has been
Pneumatic valve cannot move	2, the pneumatic actuators separate gas the sealing ring and the cylinder is da
	3, there is impurity will valve core, valve
	4, manual institutions handle in position
	1, the air pressure is not enough.
Slow and crawl	2, pneumatic actuator output torque is
	3, valve core, or other valve assembly is
	4, gas pipeline blockage, too much too s
	1, the power line is short circuit or open
To reply, no signal	2, reply in CAM position is not accurate.
	3, the micro switch is damaged.

# Solution e coil is burnt, Replace the solenoid valve, replace the coil, dirt stuck. to remove dirt as test, check damaged. Replacement has bad sealing ring and cylinder Remove impurities, there is a replacement ve stuck. has been damaged on to manually Turn the lever to pneumatic position. Increase the air pressure(0.4~0.7MPa) s too small. Increase specifications of pneumatic actuators is too tight. Reassemble adjustment small. Eliminate congestion, replace the filter cartridge n circuit. Maintenance the power line Adjust the CAM to the right place

Change the micro switch



#### Gas source sanlian pieces



The air handling sanlian pieces including air pressure reducing valve, filter, oil mist device 3 big.Pressure reducing valve can be regulated for air source air source, and so is in a constant state, because of air pressure can be reduced with mutations in the valve or actuator and other hardware damage. Filters for air cleaning, filtering the moisture in compressed air, avoid water enters the device with the gas. Oil mist lubrication on the body moving parts for, can to lubrication of parts is not convenient to add lubricant, greatly extend the service life of the body.

#### Technical parameters

Mode	1	AFC1500	AFC1500	AC2000	AFC3000		
	filter	AF1500		AF2000			
Constitute a component	Pressure regulating valve	AR1500	AFR1500	Ar2000	AFR1500		
	Oil feeder	AL1500	AL1500	AL2000	Al2000		
weigh	t	0.7kg	0.5kg	0.7kg	0.5kg		
To take over the	e diameter	ļ	/	1/4			
Working m	edium	air					
Filter accu	iracy	40 µ					
Using the press	ure range	Manual drainage: 0.05~0.85Mpg					
maximum adjusta	ble pressure	0.95Mpa					
Ensure that re to press		1.5Mpa					
Using the temper	ature range	5~60℃					
Filter cup ca	pacity	15CC					
To the oil cup	capacity	25CC					
Recommended lu	bricating oils	ISO VG32 Or oil at the same level					

#### Solenoid valve



4 v, 4 m series solenoid valves for pneumatic valves "open" or "off" the electrical control operation. Accord with NAMUR standard connection, Among them 4 m series solenoid valve can be directly installed in the side of the pneumatic actuators, don't need to pipe connection. According to the instrument Control systems need to choose single or double electric control electric control. Two five-way solenoid valve with double acting type actuator, Both the 3-way magnet valve (with single-acting actuator. At the same time, the product has the basic (IP67) and explosion-proof type, Explosion-proof level for Exd IIBT4 its explosion-proof level apply to factory and explosive environment. Also can according to need to choose the suitable voltage.

Standard voltage: DC 24 v, 220 v AC 4.3 VA DC3W consumed power: standard coil, AC

#### Technical parameters

	4V210	4M210	4V310	4M310				
Model	4V220	4M220	4V320	4M320				
Working medium	Air (40 micron strainer filter)							
interface	Ai	Air inlet G	1/4					
effective cross-sectional area (nm°)	35							
lubrication		Don't need (or oil)						
Pressure of work	0.15-0.8							
Working temperature	0-50 (Under the condition of not freeze							
Voltage range	15 %							
Power consumption	AC220V: 3.9VA, 6.0VA, 8.5VA D C 24V: 2.5W, 4.8W							
Turnaround time	0.05							
manually	Replaced the reversing (press the rotation can be self-locking)							
basic		IP	IP65					
Explosion-proof type		Exd Bt4	(optional)					



#### Limit switch



APL series valve position feedback device is testing the valve in the state of a kind of automatic control system, field instruments to the valve open or closed position to switch signal output (contact), and accepted by the programmable device or computer samples, confirm and executing the next program. This product can be as important in autonomous system interlock protection and remote alarm indication.

#### locator



YT - 1000 r series electrical continuity of the valve positioner is digestion, absorption, domestic in the ninety s Similar products outside the most advanced technology of design and manufacture of a new generation of products, with high precision, Features (output, can choose according to the characteristics of output traffic is adjustable, general compatibility strong, positive and negative Function and the Angle of straight trip itinerary can transform. Composite explosion-proof), stable and reliable performance, convenient installation and debugging, etc.

convenient installation and debugging, etc. YT - 1000 r series electrical continuity of the valve positioner and pneumatic regulator is used, the standard of or process of dc current signal corresponding to the pneumatic operation signal drive control valve, the displacement feedback at the same time, in order to make the valve opening position accurately with the input signals corresponding to the position.

#### Technical parameters

Mard at	APL-3	N series	APL-4N series				
Model -	standard	options	standard	options			
Connection port	2X1/2 PT1/2 NPT PF1/2 M20,PG13.		2X3/4NPT	PT3/4 PF3/4			
	8	9~24	8	9~24			
Terminal	0~90°	0~180°	0~90°	0~180°			
blocks	Conform standard <b>RU</b> € ⊕ △ ○ ○ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □						
Position indicator			w; Close - red				
	Mechanical, induction, spring proximity						
micro switch				, and a second			
micro switch potentiometer	1K ohr	n (0~5k ohr	n, 0~10k oh				
	1K ohr		n, 0~10koh (20~4mA)				

#### Technical parameters

Model	YT-1000R
input signal	4~20mADC
input impedance	250 Ω ± 5%
output characteristics	百分比
Air pressure	0.14-0.7Mpa
output pressure	0~0.7Mpa
Angular travel	0~90°
Gas consumption	output while the other 50% gas consumption Single acting : 140kpa Air pressure=5NI/mim Double acting: 400kpa Air pressure=5NI/mim
Maximum processing capacity	Output when the lateral air object completely Single acting : 140kpa Air pressure=175NI/mim Double acting : 400kpa Air pressure=400NI/mim
linearity	± 2%
Degree of lag	1%
sensitivity	±0.5%
repetitive	±0.5%
environment temperature	−20°C~+80°C
Explosion- proof grade	Outdoor waterproof model (increased safety type) e Exe II T6, IP55, IP65 Withstand voltage explosion-proof type, flameproof d Exd II BT6 (optional) Intrinsically safe type. (Ann) i Ex in II Ct6 (optional)
Air interface	G1/4
Electrical interface	G1/2
Pressure gauge interface	G1/8
shell material	Cast aluminum alloy (spray coating)
weight	





Pneumatic three-way ball valve



Pneumatic fixed ball valve



Pneumatic with floating manually ball valve



pneumatic Insulation ball valve





Pneumaticclamp thin ball valve Pneumatic stainless steet floating ball valve





Pneumati EV t adjustment ball valve



Pneumatic sealing clamp butterfly valve Pneumatic stainless steel clamp butterfly valve





pneumatic Three type ball valve





Pneumatic with manually flange butterfly valve Pneumatic fluorine clamp butterfly valve